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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,876	01/05/2000	CHRISTOPHER M. HERRING	P04658	9857

34456 7590 06/01/2004

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EXAMINER

HYUN, SOON D

ART UNIT	PAPER NUMBER
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2663

16

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/477,876

Applicant(s)

HERRING ET AL.

Examiner

Soon-Dong Hyun

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6,25,29 and 36-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,25,29 and 36-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 13/March 19, 2004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/19/2004 has been entered.

### ***Claim Objections***

2. Claims 49 and 52 are objected to because of the following informalities.

In claim 49, "first" should be change to -- second --.

In claim 52, line 2, first "first" should be change to -- second --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 42-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (U.S. Patent No. 6,393,007) in view of Persson et al (U.S. patent No. 5,537,434).

Regarding claim 42, Haartsen discloses a method comprising:

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transmitting voice information from a transceiving unit (a radio access unit 2 in FIG. 1) over a first set of time slots (slots 1, 2, 3 in FIG. 4) associated with a first time frame (hop k frame) of a wireless channel (9 in Fig. 1);

transmitting data information from the transceiving unit over a second set of time slots (slots 8-11 in FIG. 4) associated with the first time frame (hop k frame) of the wireless channel (9 in Fig. 1)

However, Haartsen differs from the present application in that the frequency hopping is cyclic, while the present application is in a pseudo random manner. Persson et al teaches a pseudo random manner for the frequency hopping (col. 9, lines 5-20). Those of skill in the art would have been motivated by Persson et al to change a carrier frequency in a pseudo random manner to increase security of transmission. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the pseudo random manner of Persson et al into Haartsen to increase security of transmission.

Regarding claim 43, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 44 and 45, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 46, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Regarding claim 47, it would have been obvious to one having ordinary skill in the art to incorporate a less or higher hopping rate as long as no unexpected results can be seen from the use of the hopping rate.

5. Claims 1-6, 25, 29, 36-41, and 48-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (U.S. Patent No. 6,393,007) in view of Dent et al (U.S. Patent No. 6,181,920) and Persson et al (U.S. patent No. 5,537,434).

Regarding claims 1, 3, 48, 49, and 52, Haartsen discloses a system for concurrent wireless voice and data communications comprising: a first transceiving unit (a radio access unit 2 in FIG. 1) tether to a voice network (PSTN) and to a data network (ISDN); and

a second, mobile transceiving unit (6 or 7);

the first transceiving unit operable to wirelessly transmit voice information from the voice network over a first predefined set of time slots (slots 1, 2, 3 in FIG. 4) of a time frame (hop k frame) and data information (d) from the data network over a second predetermined set of time slots (slots 8-11) of the time frame.

However, Haartsen does not explicitly teach that the multiple time slots are allocated for the second mobile unit for the voice information and data information allocated in the frame. Dent teaches that multiple slots in a TDMA frame are allocated for a mobile terminal to support

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simultaneous voice and data transmission (col. 6, lines 11-16). Therefore, it would have been obvious to one having ordinary skill in the art to allocate multiple time slots in a time frame to support concurrent voice and data transmission.

Haartsen differs from the present application in that the frequency hopping is cyclic, while the present application is in a pseudo random manner. Persson et al teaches a pseudo random manner for the frequency hopping (col. 9, lines 5-20). Those of skill in the art would have been motivated by Persson et al to change a carrier frequency in a pseudo random manner to increase security of transmission, Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the pseudo random manner of Persson et al into Haartsen to increase security of transmission.

Regarding claims 2, and 4-6, Haartsen does not teach that the data network is a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network as recited in the claims. It will be apparent to those skilled in the art that V.90 modem, a cable modem or an Ethernet could be used for the data network of Haartsen, because no unexpected results can be seen from the use of such data networks. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate a V.90 modem coupled to PSTN, or cable modem coupled to a CATV system, or an Ethernet network for the data network.

Regarding claims 25 and 29, Haartsen does not explicitly teach that a time slot containing data information comprises a forward error correction code. It would have been obvious to one having ordinary skill in the art to add a forward error correction code to data information for a receiver to correct an error, if any, when the data is received.

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Regarding claim 36, Haartsen further discloses that the first transceiving unit receives from the second transceiving unit voice information over a third predefined set of time slots (slots 13-15 in FIG. 4) of a time frame and data information over a fourth predefined set of time slots (slots 20-23) of the time frame.

Regarding claims 37 and 38, Haartsen further discloses that a number of the first predefined set of time slots and a number of the second predefined set of time slots are equal to a number of the third predefined set of time slots and a number of the fourth predefined set of time slots, respectively.

Regarding claim 39, it will be apparent to those skilled in the art that the number of the first predefined set of time slots could be equal to the number of the second predefined set of time slots when traffic volume for voice and data are same. Therefore, it would have been obvious to one having ordinary skill in the art to allocate same number of time slots for the voice and data.

Regarding claims 40 and 41, it will be apparent to those skilled in the art that the number of predefined set of time slots for downstream and upstream could be different when the traffic volume is different. Therefore, it would have been obvious to one having ordinary skill in the art to allocate different number of time slots for downstream and upstream.

Regarding claim 50, Haartsen further discloses that the frequency band for the system is the ISM band (approx. 2401-2480 MHz).

Regarding claim 51, Haartsen teaches 79 carrier frequencies, but it would have been obvious to one having ordinary skill in the art to incorporate less or more carriers (i.e., 75

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carriers) in the frequency band as long as no unexpected results can be seen from the use of the 75 carriers.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon-Dong Hyun whose telephone number is (703) 305-4550.

The examiner can normally be reached on Monday-Friday from 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen, can be reached on (703) 308-5340.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

7. Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Or faxed to: 703-872-9306 for formal communications intended for entry with a label of

"OFFICIAL" and for informal or draft communications with a label of "PROPOSED" or "DRAFT" (attn: Art Unit 2663, Soon-Dong Hyun).

  
S. Hyun

05/24/2004



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